REMARKS

Entry of the foregoing, re-examination and reconsideration of the subject matter identified in caption, as amended, pursuant to and consistent with 37 C.F.R. § 1.111, and in light of the remarks which follow, are respectfully requested.

Claims 1 and 4 have been amended to delete the word "relative." Claims 2-7 have been amended to further improve their form and/or for further clarity. These amendments are not to be deemed to narrow the scope of the claims.

Upon entry of the Amendment, claims 1-22 will be all the claims pending in the application.

I. Information Disclosure Statement

Applicants filed an Information Disclosure Statement along with a Form PTO-1449 on September 11, 2007, subsequent to the issuance of the present Office Action. The Examiner is respectfully requested to initial and date the Form PTO-1449 and return a signed copy to Applicants in the next PTO communication.

II. Response to Claim Objection

Claims 1, 4 and 7 were objected to for informalities.

Applicants respectfully submit that the present claims as amended do not contain informalities. As noted above, claims 1 and 4 have been amended to delete the objected-to word "relative." In addition, claim 7 has been amended to replace the objected-to phrases "from 100°C to the temperature which is the glass transition temperature of the resin plus 150°C" and "from 40°C to the temperature which is the glass transition temperature of the resin plus 50°C" with --from 100°C to 300°C-- and --from 40°C to 200°C--, respectively, as suggested by the Examiner during a telephone conversation on May 15, 2007.

Accordingly, the Examiner is respectfully requested to reconsider and withdraw the objection.

III. Response to Rejections under 35 U.S.C. § 103(a)

a. Claims 1-3, 11, 12, 16, 17, 21 and 22 were rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 4,265,993 to Kawanishi et al. in view of US 2001/0028988 to Magome et al.

b. Claims 4-7, 9, 10, 14, 15, 19 and 20 were rejected under 35 U.S.C. §103(a) as being obvious over Kawanishi et al. in view of Magome et al., and further in view of JP 05-295123 to Ozaki et al.

c. Claims 8, 13 and 18 were rejected under 35 U.S.C. § 103(a) as being obvious over Kawanishi et al. in view of Magome et al., and further in view of U.S. Patent No. 5,319,337 to Matsunari et al.

Applicants respectfully traverse the rejections for the following reasons.

Present claim 1 relates to a spherical composite composition which is made by adding (B) 5 to 1,000 parts by weight of a magnetic material having the longest length in two-dimensional projection of 0.01 to 50 μm, to 100 parts by weight of a resin comprising unsaturated vinyl units having (A-1) a glass transition temperature of 50 to 150°C and (A-2) a weight average molecular weight of 10,000 to 1,000,000, wherein the average particle diameter is 1 to 100 μm, and the sphericity is 0.7 to 1.

Further, present claim 4 relates to a process of producing a spherical composite composition which is obtained by adding (B) 5 to 1,000 parts by weight of a magnetic material having the longest length in two-dimensional projection of 0.01 to 50 μm, relative to 100 parts by weight of a resin dispersed in an aqueous medium comprising unsaturated vinyl

units having (A-1) an average particle diameter of 0.01 to 1 μm, (A-2) a glass transition temperature of 50 to 150°C, and (A-3) a weight average molecular weight of 10,000 to 1,000,000, dispersing the material in the medium, and then forming the dispersion into particles by spray drying, wherein the average particle diameter is 1 to 100 μm, and the sphericity is 0.7 to 1.

As demonstrated in the present specification, the presently claimed invention can provide unexpectedly superior results by using the specified resin.

Specifically, the comparison between Example 1 and Comparative Examples 3 and 4 described in the present specification shows the unexpected superiority of the presently claimed invention by employing a resin having the specified glass transition temperature. The results are re-presented in the following table:

		Example 1	Co-Ex. 3	Co-Ex. 4
Composition	Kind of the resin	A-1	A-9	A-9
	Composition of the resin (part)	100	100	100
	Kind of the magnetic material	B-1	B-1	B-1
	Composition of the magnetic material (part)	100	100	100
Condition for particle formation	Inlet temperature of hot air (°C)	120	120	115
	Outlet temperature of hot air (°C)	65	65	65
	Disk rotation No. (rpm)	18,000	18,000	18,000
Total concentration of the resin and the magnetic material in the aqueous medium (% by weight)		46	46	46
Productivity in particle formation		AA	BB	CC
Properties of the composite composition	Average particle diameter (μm)	32	35	Avaluative
	Sphericity	0.81	0.85	

Tg of resin A-1 is 86°C and weight average molecular weight of A-1 is 130,000. Tg of resin A-9 is 45°C and weight average molecular weight of A-9 is 130,000. The symbols in the above table have the same meanings as described in the present specification.

As can be seen from the data in the above table, the spherical composite composition of Example 1 is superior to Comparative Examples 3 and 4 in terms of productivity and physical properties of the product, in particular, average particle diameter and sphericity.

When the glass transition temperature of the resin is lower than 50°C as in Comparative Examples 3 and 4, the resin is aggregated and/or solidified in the disk of the spray parts of the spray dryer, and thus the productivity is poor.

Further, the comparison between Example 1 and Comparative Example 1 described in the present specification shows the unexpected superiority of the presently claimed invention by employing a resin having the specified weight average molecular weight. The results are re-presented in the following table:

		Example 1	Co-Ex. 1
Composition	Kind of the resin	A-1	A-8
	Composition of the resin (part)	100	100
	Kind of the magnetic material	B-1	B-1
	Composition of the magnetic material (part)	100	100
Condition for particle formation	Inlet temperature of hot air (°C)	120	115
	Outlet temperature of hot air (°C)	65	65
	Disk rotation No. (rpm)	18,000	18,000
Total concentration of the resin and the magnetic material in the aqueous medium (% by weight)		46	46
Productivity in particle formation		AA	AA
Properties of the composite composition	Average particle diameter (μm)	32	19
	Sphericity	0.81	0.42

Tg of resin A-8 is 90°C and weight average molecular weight of A-8 is 1,200,000. The symbols in the above table have the same meanings as described in the present specification.

As can be seen from the data in the above table, when the weight average molecular weight of the resin is more than 1,000,000 (Comparative Example 1), it is difficult for the resin to melt, and the thus-formed powders are not bound (bound by the melting of the resin) and the sphericity becomes low.

Moreover, the comparison between Example 1 and Comparative Examples 5 and 6 described in the present specification demonstrates the effects of conditions for particle formation (relevant to claim 7). The results are re-presented in the following table:

		Example 1	Co-Ex. 5	Co-Ex. 6
Composition	Kind of the resin	A-1	A-9	A-9
	Composition of the resin (part)	100	100	100
	Kind of the magnetic material	B-1	B-1	B-1
	Composition of the magnetic material (part)	100	100	100
Condition for particle formation	Inlet temperature of hot air (°C)	120	2400	96
	Outlet temperature of hot air (°C)	65	150	60
	Disk rotation No. (rpm)	18,000	18,000	18,000
Total concentration of the resin and the magnetic material in the aqueous medium (% by weight)		46	46	46
Productivity in particle formation		AA	CC	CC
Properties of the composite composition	Average particle diameter (μm)	32	avaluatives	43
	Sphericity	0.81		0.83

The symbols in the above table have the same meanings as described in the present specification.

As can be seen from the data in the above table, when the inlet temperature of hot air is higher than 300°C (Comparative Example 5), the resin is aggregated or solidified in the disk of the spray parts and production is not possible. Further, when the inlet temperature of hot air in the spray dryer is 100°C or less (Comparative Example 6), drying is not sufficient in the drying chamber of the spray dryer, so the resin contains a lot of water and adheres to the drying chamber, and thus the productivity is poor.

In summary, the presently claimed spherical composite composition can possess high sphericity and can be well used in applications such as a resin magnet, an electric wave absorption material, a magnetic shield material, a magnetic toner material and a toner carrier material. Furthermore, the process of producing the presently claimed spherical composite composition is simple and provides good productivity without the need of two or more production steps, and thus has a high industrial value.

Kawanishi et al. discloses a magnetic toner composition comprising a magnetic powder and a resin, wherein the composition has a particulate diameter ranging between 3

and 30 μm, an electric resistivity ranging from between 10^9 and 10^{16} ohm·cm at 4000 volts/cm DC and a dielectric constant ranging between 2.6 and 5.

As the Examiner concedes, Kawanishi et al. does not disclose the sphericity of the spherical composite composition containing a resin having the specific glass transition temperature and weight average molecular weight.

Magome et al. discloses, in paragraph [0200], a toner composition containing a polymerizable monomer, a magnetic material, a release agent, a plasticizer, a charge control agent, a cross-linking agent and optionally a colorant. In the composition of Magome et al., the monomer is merely a polymerizable monomer and not a resin (i.e., polymer). Magome et al. does not disclose a resin comprising unsaturated vinyl units and having the specific glass transition temperature as recited in the present claims.

Applicants respectfully submit that there is no motivation to combine Magome et al. with Kawanishi et al. since the compositions described therein are different from each other. In addition, neither Kawanishi et al. nor Magome et al. disclose or suggest the superior results obtainable in the presently claimed process, as described above, in particular, in terms of productivity.

Further, Ozaki et al. is relied upon merely as teaching a process for preparing a composite particles by spray drying. Matsunari et al. is relied upon merely as teaching a resin magnet comprising a spherical composite composition. None of Ozaki et al. and Matsunari et al. rectify the deficiencies of Kawanishi et al. and Magome et al.

Moreover, Ozaki et al. merely generally describes a process of spray drying; however, it does not disclose the specific conditions of spray drying as recited in present claim 7.

In view of the foregoing, Applicants respectfully submit that the present claims are not obvious over the cited references and thus the rejections should be withdrawn.

IV. Conclusion

From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order and such action is earnestly solicited. If there are any questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned at (202) 452-7932 at his earliest convenience.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

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By: ______________________

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